Self Reported Health Status and its Determinants among Elderly Widows in Puducherry, India

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Abstract

Background: Aging of population is a worldwide phenomenon of the 21st century, which leads to many socioeconomic consequences including their health status. Hence, this study tries to assess the self-reported health status (SRHS) of elderly widows (60+ years) and its principal determinants. **Materials and Methods:** A cross-sectional study was conducted among 360 elderly widows from Puducherry district, 260 urban and 130 from rural areas. The sociodemographic information and the self-rated health status of elderly widows were collected with semi-structured interview schedule. Data were analyzed adopting descriptive statistics and multivariate analysis making use IBM-SPSS software 22 version. **Results:** Thirty-seven percent each of the elderly widows felt to be in "fair" and "good" health status, respectively, whereas 26% of them stated to be living with "poor" health status. Results of multinomial regression analysis showed that multinomial regression analysis showed that the odds of "poor" and "fair" SRHS (as against "good" SRHS) of elderly widows are conspicuously higher among those who are suffering from 2 or more chronic morbidities, whereas such odds are significantly lower among those who have 2 or more sons, educated up to middle school level and above, and who have higher functional ability. Urban residence, middle-old ages (66–76), and moderate monthly family income (Rs. 3001–9000) have also exhibited some net effects on the "poor" and/or "fair" SRHS of elderly widows. **Conclusion:** Chronic morbidity, having son(s), education, economic status, functional ability, and urban residence are found to be the major determinants of the SRHS among elderly widows.

Keywords: Determinants, elderly widows, multinomial regression, Puducherry, self-reported health status

Introduction

Aging of the population is a worldwide phenomenon of the 21st century as most of the developed countries have almost attained demographic transition and a considerable number of developing countries are approaching the same. According to the India Aging Report, 2017,[1] by 2030 around 12.5% of population of India are likely to be 60 years and older. By 2050, about one-fifth of India's population will be of this age group. At this juncture, there is a need to study the prevalence of ill health among the elderly population to strategize, to provide health-care facilities, and/or other social security measures to meet the demands of preventive and curative health services. Against this background, this study aimed to assess the self-reported health status (SRHS) of the elderly widows and also to investigate the principal determinants of their SRHS in Puducherry district.

As elderly women are going to live longer, they are going to suffer more with chronic morbidities and ill health/poor health status. Such vulnerability would be still higher among elderly widows as they are highly dependent on others due to loss of their spouse, not able to earn income by participating in any economic activities, and lack of access to monetary resources/property; besides having lower literacy and health awareness.

The health status of the aged persons is measured with a variety of indicators such as extent of acute and/or chronic morbidities,

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self-reported illnesses, SRHS, self-perceived dependency based on activities of daily living (ADL) or instrumental ADL (IADL), etc. Of all these, the SRHS has been widely used in several surveys like the Longitudinal Aging Study, Study on Global Aging and Adult Health, National Sample Survey Organization surveys, etc. It is found to be more prominent and also reliable predictor of health status of aged persons, especially in developing countries such as India.[2-4]

MATERIALS AND METHODS

This study was a community-based and cross-sectional survey, which was carried out during March–June 2019 in the urban and rural areas of Puducherry district. For this study, while ethical approval was obtained from the Institute's (IIHMR University, Jaipur) Scientific and Ethical committee, administrative approval was obtained from Social Welfare Department of Puducherry. Eligible study participants were contacted and informed consent was obtained from them. The original sample size was estimated 315 based on the formula, $n = Z^2 (1 − P) P/d^2$ keeping the proportion of elderly widows (i.e., 60 years and above) as 0.051 (5.1%) and precision (*d*) as $0.5 × P$ (i.e., 0.255) with a confidence level (*Z*) as 95%. Adding 10% of non-response rate and the design effect of 1.25, the sample elderly was increased to 390. The sample was selected in two stages. At the first stage, 30 sample clusters –20 clusters (streets or parts of streets) from 8 urban wards and 10 clusters (villages or parts of villages) from 4 rural wards were selected based on the simple random sampling method. At the next stage, from each cluster 13 elderly widows were selected based on systematic random sampling techniques (30 clusters × 13 sample = 390).

A semi-structured interview schedule with face-to-face interview method was used to obtain information about sociodemographic, economic, and health background of the elderly widows. The data on SRHS of the elderly widows were collected based on three categorized variable[4-9] with the following codes …. The data on SRHS of the elderly widows were collected based on three categorized variable with the following codes, viz., "Poor" =0, "Fair" =1 and "Good" =2 and this variable was considered as dependent variable. All the sociodemographic and economic status variables were treated here as independent variables [Table 1], which were mostly self-explanatory, except the functional ability, which was computed with the help of Lawton and Brody's IADL scale.[5] This scale was based on eight specified functions, namely the ability to telephone, go to shopping, food preparation, housekeeping, doing laundry, traveling, responsibility for own medication, and ability to handle finances. The scoring followed here was a minimum of "0" (who are not able to perform the specified activity) and a maximum of "1" (who are able to perform partially or fully the specified activity). The assigned scores were pooled scores for each participant and then, based on the pooled scores, all the elderly were grouped into three categories of functional ability status, viz., lower (able to perform any four activities specified

under IADL), moderate (5–7 activities) and higher (able to perform all eight activities). The data were analyzed with IBM Corp. Released 2013. IBM SPSS Statistics for Windows, Version 22.0. (Armonk, NY: IBM Corp.) making use of frequencies, percentages, Chi-square test, and multinomial logistic regression analysis.

RESULTS

Data on sociodemographic and economic status variables is as shown in Table 1. Majority of the subjects were illiterate, residing in urban localities with their children. Majority had more than one morbidity but had moderate to high functional ability.

Around 26% self reported their health as Poor [Table 1]. This was higher among those who are in 76+ years of age, illiterates, belonged the households of lower monthly income bracket (INR 3000 or less per month), living alone, do not have a son, have lower and moderate functional ability, and suffering from 1 and 2+ chronic morbidity conditions than their respective counterparts. Conversely, the percentage of elderly widows who reported their overall health status as "good" is higher among those who are young old in age (60–65 years), have some education (primary school and middle school and above), belonged to middle and higher monthly family income brackets (INR 3000–9000 and INR 9001 and above), co-residing with children/others, having one or two or more number of son(s), have higher functional ability and not suffering from any chronic morbidity condition. Contrary to the expectation, the percentage of elderly widows who perceived health status as "poor" is higher among those who are living in urban areas than in rural areas, the opposite pattern is well established in the case of those who reported their overall health status as "good." Obviously, with a few exceptions, the percentage of elderly widows who perceived their health status as "fair" mostly falls on line with that of those who reported as "good." Difference across all the categories was highly significant.

Results of multinomial logistic regression analysis reveal that, in the case of those *elderly widows whose SRHS stated to be "poor"* (in comparison to "good"), the odds are higher among those who are suffering from 2+ chronic morbidities and any 1 chronic morbidity (odds ratio [OR] =88.673 and 5.968; $P < 0.001$ and $P < 0.05$, respectively). Conversely, such odds are lower among those who are educated up to the middle school and above level (OR = 0.088; $P < 0.001$), whose functional ability is higher (on IADL scale; OR = 0.203; $P < 0.001$), who have 2 or more number of sons (OR = 0.293; $P < 0.01$) and who belonged to households of middle-level family monthly income (INR 3001–9000; OR = 0.279; $P < 0.05$).

Multinomial logistic regression results on *elderly widows whose SRHS is perceived as "fair"* (in comparison to "good"), the odds are much higher among those who are suffering from 2+ morbidity conditions (OR = 6.416; $P < 0.001$) as well as among those who are residing in urban

Table 1: Percentage distribution and the extent of the self-reported health status of elderly widows in Puducherry across their background characteristics

Background characteristics of the elderly	Self-reported health status of elderly widows			Total, *n* (%)
	Poor, *n* (%)	Fair, *n* (%)	Good, *n* (%)	
1. Place of residence*				
Rural	24 (18.5)	38 (29.2)	68 (52.3)	130 (33.3)
Urban	77 (29.8)	107 (41.2)	76 (29.2)	260 (66.7)
2. Age (years)#				
60-65	28 (22.1)	36 (28.6)	62 (49.2)	126 (32.3)
66-76	39 (24.5)	69 (43.4)	51 (32.1)	159 (40.8)
76+	34 (32.4)	40 (38.1)	31 (29.5)	105 (26.9)
3. Educational level*				
Illiterate	74 (31.6)	93 (39.7)	67 (28.6)	234 (60.0)
Primary school	20 (23.5)	26 (30.6)	39 (45.9)	85 (21.8)
Middle school and above	7 (9.9)	26 (36.6)	38 (53.5)	71 (18.2)
4. Monthly family income (in Rs.)*				
3000 or less	55 (39.0)	50 (35.5)	36 (25.5)	141 (36.2)
3001-9000	19 (16.0)	45 (37.8)	56 (46.2)	119 (30.5)
9001 and above	27 (20.8)	50 (38.5)	53 (40.8)	130 (33.3)
5. Living arrangements*				
Co-residence with children	48 (19.8)	96 (39.7)	98 (40.5)	242 (62.1)
Living alone	53 (35.8)	49 (33.1)	46 (31.3)	148 (37.9)
6. Number of sons living*				
0	30 (34.1)	38 (43.2)	20 (22.7)	88 (22.5)
1	38 (26.6)	54 (37.8)	51 (35.7)	143 (36.7)
2+	33 (20.8)	53 (33.3)	73 (45.9)	159 (40.8)
7. Functional ability (IADL)*				
Lower (able to do ≤4 activity)	27 (31.4)	35 (40.7)	24 (27.0)	86 (22.1)
Moderate (able to 5-7 activity)	39 (26.2)	63 (42.3)	47 (31.6)	149 (38.2)
Higher (able to do all 8 activity)	35 (22.3)	47 (30.3)	73 (47.1)	155 (39.7)
8. Chronic morbidity*				
No chronic morbidity	3 (4.6)	22 (33.8)	40 (61.5)	65 (16.7)
Suffering from any 1 morbidity	39 (18.8)	78 (37.5)	91 (43.8)	208 (53.3)
Suffering from any 2+ morbidity	59 (50.4)	45 (38.5)	13 (11.1)	117 (30.0)
Total	101 (25.9)	145 (37.2)	144 (36.9)	390 (100.0)

IADL: Instrumental activities of daily living, *P<0.001, # P<0.01

areas (OR = 1.970; *P* < 0.05). However, similar odds are found to be lower among those who have 2+ and 1 son(s) (OR = 0.278 and 0.433; *P* < 0.001 and *P* < 0.05, respectively), whose functional ability is higher (OR = 0.448; *P* < 0.05) and among those who are educated up to middle school level and above (OR = 0.466; *P* < 0.05).

DISCUSSION

The percentages of elderly widows, in Puducherry, who reported their overall health as "poor" and "fair" (26% and 37%, respectively) are comparatively higher as noted by Audinarayana[10,11] in the neighboring state Tamil Nadu. This could be due to the fact that the present study is conducted among elderly widows as against the other cited studies dealt with elderly persons (60+) in general. In the present study, chronic morbidity status and functional ability are observed as the major determinants of SRHS. These findings confirm that while elderly widows suffering from any two or more

chronic morbidities and also to some extent from any one morbidity have shown a tendency to report poor as well fair health status (as against "good" health status) to a higher extent, elderly widows who can perform daily activities (IADL) to a higher extent are less likely to perceive such poor and fair health status. Some of the earlier studies conducted in different settings abroad as well as in India have illustrated almost similar findings.[3,4,11-17] This study also clearly supports the fact that there exists a significant inverse relationship between the level of education and SRHS. Earlier research also exhibited such phenomenon as almost universal.[3,4,6-24]

Another worthy finding of this study is that elderly widows who have two or more sons and also to some extent those who have one son, to a large extent, are found to be less likely to report their health status as "poor" and "fair" as compared to those who have no son. This is possible because of the chief reason that, generally, elderly widows who have son(s) mostly live with them and thereby, likely to enjoy better physical and

emotional health. Even if the elderly are not living with them, in majority cases, one or the other son(s) used to support the elderly through monetary resources as well as likely to extend physical and emotional care when there is a need or demand.[9] Contrary to the expectation, elderly widows living in urban areas perceived their health status as poor and fair, somewhat higher extent, than those living in rural areas. This could be because of the reasons that the sample elderly living in urban areas are large in number, that too, a sizeable number of them is living in slum areas that are mostly illiterate and belonged to families that have lower family incomes, besides poor dietary habits. This finding is analogous with the ones found by Haseen *et al.*[15] in Thailand and Mishra *et al.*[8] in India.

As expected, the economic status of the family (monthly family income) has exhibited somewhat negative association with poor SHRS among elderly widows. This is because elderly who have higher incomes and/or belonged to households of higher income/wealth quintiles tend to have nutritious food, likely to take preventive care toward diseases to a higher extent, take immediate steps to avail and cure the diseases when they occur, besides having higher education and care from family members. Some studies carried out in the Indian context as well as from abroad have supported such findings.[3,6-8,10,11,14-16,18,19,24]

Conclusion

The study concludes that while elderly widows who are suffering from chronic morbidities have a higher tendency to report "poor" health status, such inclination is significantly lower among those who have better functional ability, higher education and economic status, besides having son(s).

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Conflicts of interest
There are no conflicts of interest.

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